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D. Margaret Seaman, Examiner GAU 1625 Patent and Trademark Office	703/872-9306	

FROM: Martha A. Robinson **USER ID:** MR10031 **FLOOR:** 20

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RE: RESUBMISSION OF IDS AND FORM PTO-1449

NUMBER OF PAGES WITH COVER PAGE: 16 **Originals Will Not Follow**

Message:

U.S. Application No. 09/506,988 entitled "PROTEASE INHIBITORS THAT OVERCOME DRUG RESISTANCE" by Tang and Ghosh.

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April 28, 2005

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I hereby certify that this correspondence is being transmitted to: Commissioner for Patents, Washington, D.C. 20231, Attn: Examiner D. Margaret M. Seaman, GAO 1625, facsimile number (703)872-9806 on the date below:

April 29, 2005
 Date

Steven L. Highlander

D. Margaret Seaman, Examiner
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450

RE: *U.S. Patent Application No. 09/506,988 entitled "PROTEASE INHIBITORS THAT OVERCOME DRUG RESISTANCE" - Jordan J.N. Tang and Arun K. Ghosh*
Our reference: OMRF:056US
Client reference:

Dear Examiner Seaman:

After reviewing each of the Office Actions and the Notice of Allowability, it has come to our attention that the Information Disclosure Statement, Form PTO-1449 and 57 references submitted on July 25, 2000, were apparently never signed off by an Examiner.

For your convenience we have enclosed a copy of a Supplemental Information Disclosure Statement and Form PTO-1449 that was filed with the Patent and Trademark Office (PTO) on July 25, 2000. Also enclosed is a copy of PTO stamped postcard indicating the documents submitted. The copies of the references previously submitted have not been enclosed. Please let us know if you would like us to resubmit those as well.

Please review and approve this Supplemental Information Disclosure Statement. If you need additional information, please let us know.

Thank you for your assistance in this matter.

Respectfully submitted,

Steven L. Highlander
 Reg. No. 37,642

SLH/mar
 Encl: as noted
 25509204.1

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The "Received" stamp of the Patent Office imprinted hereon acknowledges the filing of:

Applicant(s): Jordan J.N. Tang and Anni K. Ghosh

Serial & Docket Nos.: 09/506,988 OMRF 176

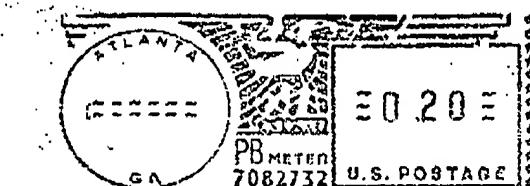
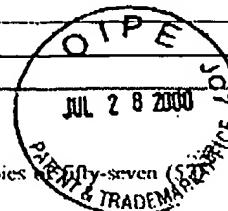
Filed: February 18, 2000

Papers Submitted:

Information Disclosure Statement, six (6) pages of Form PTO-1449; and copies of the fifty-seven (57) documents cited therein.

Date: July 25, 2000 Client/Matter No.: 20487/244

By: Patrea L. Pabst, Reg. No. 31,284



Patrea L. Pabst, Esq.
ARNAJL GOLDEN & GREGORY, LLP
2800 One Atlantic Center
1201 West Peachtree Street
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Jordan J.N. Tang and Arun K. Ghosh

Serial No.: 09/506,988

Art Unit:

Filed: February 18, 2000

Examiner: Not Yet Assigned

For: *PROTEASE INHIBITORS THAT OVERCOME DRUG RESISTANCE*Assistant Commissioner for Patents
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

Sir:

Pursuant to 37 C.F.R. §1.56 and 37 C.F.R. §1.97, Applicants submit an Information Disclosure Statement, including six (6) pages of Form PTO-1449 and a copy of each document cited therein.

This Information Disclosure Statement is being filed under 37 C.F.R. § 1.97(b) prior to a first Office Action on the merits. It is believed that no fee is required with this submission. However, should a fee be required, the Commissioner is hereby authorized to charge any required fees to Deposit Account No. 01-2507.

Publications

BALDWIN, et al., "Structural basis of drug resistance for the V82A mutant of HIV-1 protease," *Nat. Struct. Biol.* 2(3):244-9 (1995).

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INFORMATION DISCLOSURE STATEMENT

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U.S.S.N.: 09/506,988
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INFORMATION DISCLOSURE STATEMENT

Remarks

This statement should not be interpreted as a representation that an exhaustive search has been conducted or that no better art exists. Moreover, Applicants invite the Examiner to make an independent evaluation of the cited art to determine its relevance to the subject matter of the present application. Applicants are of the opinion that their claims patentably distinguish over the art referred to herein, either alone or in combination.

Respectfully submitted,



Robert A. Hodges
Reg. No. 41,074

Dated: July 25, 2000

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U.S.S.N.: 09/506,988

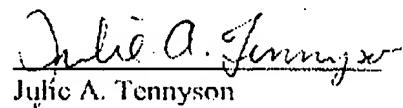
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INFORMATION DISCLOSURE STATEMENT

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Julie A. Tennyson

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT <small>(use as many sheets as necessary)</small>		Application Number	09/506,988
Sheet	1	of	6
		Attorney Docket Number	OMRF 176

OTHER ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner's Initials*	Cite No.†	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	‡
		BAIDWIN, et al., "Structural basis of drug resistance for the V62A mutant of HIV-1 protease," <i>Nat. Struct. Biol.</i> 2(3):244-9 (1995).	
		BOGER, "Renin Inhibitors. Design of Angiotensinogen Transition-state Analogs Containing Statine:Conformationally restricted inhibitors and a model for the bound conformation of renin substrate," in <i>Aspartic Proteases, and Their Inhibitors</i> , (Kostka, V., ed.), pp. 401-420, Walter de Gruyter:NY., 1985.	
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		CARROLL, et al., "Identification of potent inhibitors of <i>Plasmodium falciparum</i> plasmeprin II from an encoded statine combinatorial library," <i>Bioorg. Med. Chem. Lett.</i> 8(17):2315-20 (1998).	
		CARROLL, et al., "Evaluation of a structure based statine cyclic diamine amide encoded combinatorial library against plasmeprin II and cathepsin D," <i>Bioorg. Med. Chem. Lett.</i> 8(22):3203-6 (1998).	
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		CONDRA, et al., "In vivo emergence of HIV-1 variants resistant to multiple protease inhibitors," <i>Nature</i> 374(6522):569-71 (1995).	
		CRAIG, et al., "Antiviral properties of Ro 31-8952, an inhibitor of human immunodeficiency virus (HIV) proteinase," <i>Antiviral Res.</i> 16(4):295-305 (1991).	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete If Known	
		Application Number	09/506,988
Filing Date	February 18, 2000		
First Named Inventor	Jordan J.N. Tang		
Group Art Unit	1614		
Examiner Name			
Sheet 2 of 6	Attorney Docket Number	OMRF 176	

OTHER ART – NON PATENT LITERATURE DOCUMENTS		
Examiner's Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published
		DEBOUCK & METCALF, "Human immunodeficiency Virus Protease: A target for AIDS therapy," <i>Drug Devel. Res.</i> 21:1-17 (1990).
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		DORSEY, et al., "L-735,524: the design of a potent and orally bioavailable HIV protease inhibitor," <i>J. Med. Chem.</i> 37(21):3443-51 (1994).
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		ERMOLIEFF, et al., "Kinetic properties of enokinavir-resistant mutants of human immunodeficiency virus type 1 protease and their implications in drug resistance in Vivo," <i>Biochemistry</i> 36(40):12364-70 (1997).
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Substitute for form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <small>(use as many sheets as necessary)</small>		Application Number	09/506,988
Sheet	3	of	6
Filing Date	February 18, 2000		
First Named Inventor	Jordan J.N. Tang		
Group Art Unit	1614		
Examiner Name			
Attorney Docket Number	OMRF 176		

OTHER ART -- NON PATENT LITERATURE DOCUMENTS		
Examiner's Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published
		DUNN, et al., "Subsite Preferences of Retroviral Proteinases" <i>Methods in Enzymology</i> 241:254-278 (1994).
		HONG, et al., "Active-site mobility in human immunodeficiency virus, type 1, protease as demonstrated by crystal structure of A28S mutant." <i>Protein Sci.</i> 7(2):300-5 (1998).
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		LAPATTO, et al., "X-ray analysis of HIV-1 proteinase at 2.7 Å resolution confirms structural homology among retroviral enzymes." <i>Nature</i> 342(6247):299-302 (1989).

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT <small>(use as many sheets as necessary)</small>		Application Number	09/506,988
		Filing Date	February 18, 2000
		First Named Inventor	Jordan J.N. Tang
		Group Art Unit	1614
		Examiner Name	
Sheet	4	of	6
		Attorney Docket Number	OMRF 176

OTHER ART - NON PATENT LITERATURE DOCUMENTS		
Examiner's Initials ¹	Cite No. ²	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published
		HIN, et al., "Effect of point mutations on the kinetics and the inhibition of human immunodeficiency type 1 protease: Relationship to drug resistance," <i>Biochemistry</i> 34:1143-1152 (1995).
		MAJER, et al., "Structure-based subsite specificity mapping of human cathepsin D using statine-based inhibitors," <i>Protein Sci.</i> 6(7):1458-66 (1997).
		MARCINISZYN, et al., "Mode of inhibition of acid proteases by pepstatin," <i>J. Biol. Chem.</i> 251(22):7088-94 (1976).
		MELLORS, "Closing in on human immunodeficiency virus-1," <i>Nat. Med.</i> 2(3):274-5 (1996).
		MOLLA, et al., "Ordered accumulation of mutations in HIV protease confers resistance to ritonavir," <i>Nat. Med.</i> 2(7):760-6 (1996).
		MULICHAK & WATENPAUGH, "The crystallographic structure of the protease from human immunodeficiency virus type 2 with two synthetic peptidic transition state analog inhibitors," <i>J. Biol. Chem.</i> 268(18):13103-9 (1993).
		NAVIA, et al., "Three dimensional structure of aspartyl protease from human immunodeficiency virus HIV-1," <i>Nature</i> 337(6208):615-20 (1989).
		PATICK, et al., "Antiviral and resistance studies of AG1343, an orally bioavailable inhibitor of human immunodeficiency virus protease," <i>Antimicrob. Agents Chemother.</i> 40(2):292-7 (1996).
		PFENG, et al., "Role of human immunodeficiency virus type 1-specific protease in core protein maturation and viral infectivity," <i>J. Virol.</i> 63(6):2550-6 (1989).
		POORMAN, et al., "A cumulative specificity model for proteases from human immunodeficiency virus types 1 and 2, inferred from statistical analysis of an extended substrate data base," <i>J. Biol. Chem.</i> 266(22):14554-61 (1991).

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		Filing Date	February 18, 2000
		First Named Inventor	Jordan J.N. Tang
		Group Art Unit	1614
		Examiner Name	
Sheet	5	of	6
		Attorney Docket Number	OMRF 17G

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		RIDKY & LEIS, "Development of drug resistance to HIV-1 protease inhibitors," <i>J. Biol. Chem.</i> 270(50):29621-3 (1995).
		RIDKY, et al., "Human immunodeficiency virus, type 1 protease substrate specificity is limited by interactions between substrate amino acids bound in adjacent enzyme subsites," <i>J. Biol. Chem.</i> 271:4709-4712 (1996).
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		ROSE, et al., "Human immunodeficiency virus type 1 viral background plays a major role in development of resistance to protease inhibitors," <i>Proc. Natl. Acad. Sci. USA</i> 93(4):1648-53 (1996).
		SCHNEIDER & KENT, "Enzymatic activity of a synthetic 99 residue protein corresponding to the putative HIV-1 protease," <i>Cell</i> 54(3):363-8 (1988).
		SIMAN, et al., "Processing of the beta amyloid precursor. Multiple proteases generate and degrade potentially amyloidogenic fragments," <i>J. Biol. Chem.</i> 268(22):16602-9 (1993).
		SZELKE, "Chemistry of Benin Inhibitors," in, <i>Aspartic Proteinases and Their Inhibitors</i> , (Kostka, ed.), pp. 423-441, (Walter de Gruyter:N.Y., 1985).
		TANG & HARTSUCK, "A kinetic model for comparing proteolytic processing activity and inhibitor resistance potential of mutant HIV-1 proteases," <i>FEBS Lett.</i> 367(2):112-6 (1995).
		TOH, et al., "Is the AIDS virus recombinant?" <i>Nature</i> 316(6023):21-2 (1985).
		TOMASSELLI, et al., "The complexities of AIDS: An assessment of the HIV protease as a therapeutic target," <i>Chemical & Chemistry Today</i> 9:6-27 (1991).

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		Application Number	09/506,988
Sheet	6	of	6
		Filing Date	February 18, 2000
		First Named Inventor	Jordan J.N. Tang
		Group Art Unit	1614
		Examiner Name	
		Attorney Docket Number	OMRF 176

OTHER ART - NON PATENT LITERATURE DOCUMENTS

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		TONG, et al., "Crystal structure of human immunodeficiency virus (HIV) type 2 protease in complex with a reduced amide inhibitor and comparison with HIV-1 protease structures," <i>Proc. Natl. Acad. Sci. USA</i> 90(18):8387-91 (1993).	
		TOWI FR, et al., "Functional characterization of the protease of human endogenous retrovirus, K10: can it complement HIV-1 protease?" <i>Biochemistry</i> 37(49):17137-44 (1998).	
		VACCA, "Design of Tight-Binding Human Immunodeficiency Virus Type 1 Protease Inhibitors," <i>Methods in Enzymology</i> 241:311-334 (1994).	
		WEI, et al., "Viral dynamics in human immunodeficiency virus type 1 infection," <i>Nature</i> 373(6510):117-22 (1995).	
		WEISS, et al., <i>RNA Tumor Viruses</i> , Cold Spring Harbor:NY, 1984.	
		WLODAWER & ERICKSON, "Structure-based inhibitors of HIV-1 protease," <i>Annu. Rev. Biochem.</i> 62:543-85 (1993).	
		WLODAWER, et al., "Conserved folding in retroviral proteases: crystal structure of a synthetic HIV-1 protease," <i>Science</i> 245(4918):616-21 (1989).	

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